

The Second Book Of Natural Magick

The Proeme

Having wandered beyond my bounds, in the considerations of causes and their actions, which I thought fit to make the subject of my first book. It will be time to speak of those operations, which we have often promised, that we may not too long keep off from them those ingenious men that are very desirous to know them. Since that we have said, That Natural Magick is the top, and the complete faculty or Natural Science, in handling it, we will conclude within the compass of this volume, whatsoever is high, noble, choice, and notable, that is discovered in the large field of Natural History. But that we may perform this, I shall reduce all those secrets into their proper place, and that no thing may be thrust out of its own rank, I shall follow the order of sciences. And I shall first divide them into Natural and Mathematical Sciences, and I shall begin with the Natural, for I hold that most convenient, that all may arise from those things that are simple, and not so laborious, to Mathematical Sciences. I shall from animals first proceed to plants, and so by steps to mineral, and other works of nature. I shall briefly describe fountains, also whence flow springs, and I shall annex thereto the reasons, and the causes, that industrious men made acquainted with this, may find out more of themselves. And because there are two generations of animals and plants, one of themselves, the other by copulation. I shall first speak of such as are bred without copulation, and next, of such as proceed from copulation one with another, that we may produce new living creatures, such as the former ages never saw. I shall begin therefore with Putrefaction, because that is the principle to produce new creatures, not only from the variety of simples, but of mixed bodies. I thought fit to leave none out, though they be of small account, since there is nothing in nature, appear it never so small, wherein there is not something to be admired.

Chapter I

"The first Chapter treats of Putrefaction, and of a strange manner of producing living creatures."

Efore we come to show that new living creatures are generated of Putrefaction, it is necessary to rehearse the opinions of ancient philosophers concerning the matter whereof though we have spoken elsewhere, in the description of plants, yet for the readers ease, we will here rehearse some of them, to show that not only imperfect, but perfect living creatures too, are generated of Putrefaction. Porphyry thought that living creatures were begotten of the bowels of the earth soaked in water, and quickened by the heat of the Sun. Of the same mind were Archelaus, the Athenian, Anaxagoras, Clazomensus, and Euripides his scholar. Cleodemus, and after him Theophrastus, thought that they came of putrefied water mixed with earth, and the colder and fouler the water was, the worse it was for their generation. Diodorus, and many other good philosophers hold, that all living creatures did arise of Putrefaction. For whereas in the beginning of the world, the heavens, and earth, and Elements were settled in their natural places, the earth being left slimy and soft in many places, and then dried and stricken with the heat of the Sun, brought forth certain tumors and swellings in the surface and uppermost parts. In these tumors were contained and cherished many Putrefactions and rotten clods, covered over with certain small skins, this putrefied stuff, being

moistened with dew by night, and the Sun heating it by day, after a certain season became ripe, and the skins being broken, thence issued all kinds of living creatures, whereof, they that had quickest heat, became Birds, the earthy ones became creeping beasts, the waterish ones became Fishes in the sea, and they which were mean, as it were, between all these, became walking-creatures. But the heat of the Sun still working upon the earth, hindered it from begetting and bringing forth any more such creatures, but then, the creatures before generated coupled together, and brought forth others like themselves. Avicenna, in that work of his which he made of deluges and floods, holds, that after the great floods that drowned the earth, there was no mans seed, but then, man, and all living creatures else, were generated of rotten carcasses, only by the virtue of the Sun. And therefore he supposes, that the womb, and such needful places framed by nature, for the better fashioning of the infant, are not needful to the procreation of man. He proves his assertion by this, that Mice, which arise of Putrefaction, do couple together, and beget store of young, yes, and serpents are generated chiefly of woman's hair. And in his book of living creatures, he tells of a friend of his, that brought forth scorpions after a strange manner, and those did beget others. Averroes held, that the stars were sufficient to generate imperfect creatures, as mice, bats, moles, and such like, but not to generate men, or Lions. And daily experience teaches us, that many living creatures come of the putrefied matter of the earth. And all the Ancients supposing all things to be produced out of the earth, called it the mother of all, the Greeks called it *Dimitera*. Ovid has very elegantly set down this generation of Putrefaction, under the fable of Pytho, that the earth brought forth of its own accord, many living creatures of diverse forms, the heat of the Sun enlivening those moistures that lay in the tumors of the earth, like fertile seeds in the belly of the mother, for heat and moisture being tempered together, causes generation. So then, after the deluge, the earth being now moist, the Sun working upon it, diverse kinds of creatures were brought forth, some like the former, and some of a new shape.

Chapter II

"Of certain earthly Creatures, which are generated of Putrefaction."

Plants and living creatures agree both in this, that some of them are generated of seed, and some of them nature brings forth of her own accord, without any seed of the same kind, some out of putrefied earth and plants, as those creatures that are divided between the head and the belly, some out of the dew that lies upon leaves, as Canker-worms, some out of mud, as shell-creatures, and some out of living creatures themselves, and the excrement's of their parts as Lice. We will only rehearse some which the Ancients have set down, that so we may also learn how to procreate new creatures. And first let us see how:

"Mice are generated of Putrefaction."

Diodorus says, that near to the city Thebais in Egypt, when Nilus overflowing is past, the Sun heating the wet ground, the chaps of the earth send forth great store of Mice in many places, which astonishes men to see, that the fore-part of the mice should live and be moved, whereas their hinder parts are not yet shaped. Pliny says, that after the swaging of Nilus, there are found little Mice begun

to be made of earth and water, their fore-parts living, and their hinder parts being nothing but earth. Aelianus says, that a little rain in Egypt, engenders many Mice, which being scattered everywhere in their fields, eat down their Corn, and devour it. And so it is in Pontus, but by their prayers to God, they are consumed. Macrobius and Avicenna say, that the Mice so generated, do increase exceedingly by coupling together. Aristotle found out, that a kind of field-mice increases wonderfully, so that in some places they did suddenly eat up whole fields of Corn. Inasmuch that many husbandmen appointing to reap their corn on the morrow, when they came with their reapers, found all their Corn wasted. And as these mice are generated suddenly, so they are suddenly consumed, in a few days, the reason whereof cannot be so well assigned. Pliny could not find how it should be, for neither could be they be found dead in the fields, neither alive within the earth in the winter time. Diodorus and Aelianus write, that these field-mice have driven many people of Italy out of their own country. They destroyed Cosas, a city of Herturia. Many came to Troas, and thence drove out the inhabitants. Theophrastus and Varro write, "that mice also made the inhabitants of the island Gyarus to forsake their country," and the like is reported of Heraclea in Pontus, and of other places.

"Frogs are wonderfully generated of rotten dust and rain."

Likewise also for a summer shower lighting upon the putrefied sands of the shore, and dust of the highways, engenders Frogs. Aelianus, going from Naples to Italy, to Puteoli, saw certain Frogs, that their fore-parts moved and went upon two feet, while yet their hinder parts were unfashioned, and drawn after like a clot of dirt. And Ovid, says, one part live, the other is earth still. And again, mud engenders Frogs that sometimes lack feet. The generation of them is so easy, and sudden, that some write it has rained Frogs, as if they were gendered in the air. Phylarchus in Athenaus writes so, and Heraclides Lembus writes, `that it rained Frogs about Dardany and Poeonia, so plentifully, that the very ways and houses were full of them. And therefore the inhabitants, though for a few days at the first they endured it, started killing the Frogs and shutting up their houses, yet afterward when they saw it to no purpose, but they could neither use water, nor boil meat, but Frogs would be in it, nor so much as tread upon the ground for them, they quite forsook their countries, as Diodorus and Eustathius write. The people Autharidae in Thespratia, were driven out of their country, by certain imperfect Frogs that fell from heaven. But it is a strange thing that;

"Red Toads are generated of dirt, and of women's flowers."

In Dariene, a Province of the new world, the air is most unwholesome, the place being muddy and full of stinking marshes, nay, the village is itself a marsh, where Toads are presently gendered of the drops wherewith they water their houses, as Peter Martyr writes. A Toad is likewise generated of a Duck that has lain rotting under the mud, as the verse shows which is ascribed to the Duck, "When I am rotten in the earth, I bring forth Toads. Happily because they and I both, are moist and foul creatures." Neither is it hard to generate Toads of women's putrefied flowers, for women do breed this kind of cattle, together with their children, as Celius Aurelianus and Platearius call them, Frogs, Toads, Lizards, and such like. And the women of Salerium, in times past, were wont to use the juice of Parsley and Leeks, at the beginning of their conception, and especially about the time of their quickening, thereby to destroy this kind of vermin with them. A certain woman lately married, being in all men's judgment great with child, brought forth instead of a child, four creatures like to Frogs, and after had her perfect health. But this was a kind of a Moon-Calf, Paracletes said, that if you cut a Serpent in pieces, and hide him in a vessel of Glass, under the mud, there will be gendered many Worms, which being nourished by the mud, will grow every one as big as a Serpent, so that of one Serpent may be a hundred generated. And the like holds of other creatures. I will not gainsay it, but only thus, that they do not gender the same Serpents. And so, he said, you may make them of a woman's flowers, and so, he says, you may generate a Basilisk, that all shall die which look upon

him. But this is a stark lie. It is evident also, that;

"Serpents may be generated of mans Marrow, of the hairs of a menstrual woman and of a Horse-tail, or mane."

We read, that in Hungary, by the river Theisa, Serpents and Lizards did breed in men's bodies, so that three thousand men died of it. Pliny writes, that about the beginning of the wars against the Marsi, a maid-servant brought forth a Serpent. Avicenna in his book of deluges, Serpents, that Serpents are gendered of women's hairs especially, because they are naturally moister and longer then men's. We have experienced also, that the hair of Horse's mane laid in the waters, will become Serpents. And our friends have tried the same. No man denies but that Serpents are easily gendered of mans flesh, especially of his marrow. Aelianus says, that a dead mans back-marrow being putrefied, becomes a Serpent. And so of the meekest living creature arises the most savage. And that evil men's backbones do breed such monsters after death, Ovid shows, that many hold it for a truth. Pliny received it of many reports, that Snakes gendered of the Marrow of men's backs. Writers also show;

"How a Scorpion may be generated of Basil."

Florentinus the Grecian says, that Basil chewed and laid in the Sun, will engender Serpents. Pliny adds, that if you rub it, and cover it with a stone, it will become a Scorpion, and if you chew it, and lay it in the Sun, it will bring forth Worms. And some say, that if you stamp a handful of Basil, together with ten Crabs or Crevices, all the Scorpions thereabouts will come unto it. Avicenna tells of a strange kind of producing a Scorpion, but Galen denies it to be true. But the body of a Crab-fish is strangely turned into a Scorpion. Pliny says, that while the Sun is in the sign Cancer, if the bodies of those Fishes lie dead upon the land, they will be turned into Scorpions. Ovid says, if you take off the Crab's arms, and hide the rest in the ground, it will be a Scorpion. There is also a;

"Creature that live but one day, bred in Vinegar."

day, they are called Homerobion, a Daysbird. So the;

"Pyrigones be generated in the fire,"

Certain little flying beasts, so called, because they live and are nourished in the fire, and yet they fly up and down in the air. This is strange, but that is more strange, that as soon as ever they come out of the fire, into any cold air, presently they die. Likewise,

"The Salamander is gendered of the water,"

For the Salamander itself genders nothing, neither is there any male or female among them, nor yet among Eels, nor any kind else, which does not generate of themselves either egg or young, as Pliny notes. But now we will speak of a most excellent generation, namely, how;

"Bees are generated of an Ox."

Aelianus writes, that Oxen are commodious many ways, among the rest, this is one excellent commodity, that being dead, there may be generated of them a very profitable kind of creatures, namely Bees. Ovid says it, that as all putrefied bodies are turned into some small living creatures, so Oxen putrefied do generate bees. Florentinus the Grecian says, that Jubas King of Africa, taught

how to make Bees in a wooden Ark. Democritus and Varro show a cruel manner of making Bees in a house. But it is a very ready way. Chose a house ten cubits high, and ten cubits broad, square every way. But let there be but one entrance into it, and four windows, on each side one. But in this room an Ox, about two or three years old, let him be fat and fleshy. Then set to him a company of lusty fellow, to beat him so cruelly, that they kill him with their cudgels, and break his bones withal. But they must take great heed that they draw no blood of him, neither must they strike him too fiercely at the first. After this, stop up all the passages of the Ox his nostrils, eyes, mouth, and necessary places of evacuation, with fine Linen Clouts besmeared with Pitch. Then cast a great deal of Honey under him, being laid with his face upwards, and let them all go forth, and daub up the door and the windows with thick Loam, so that no wind, nor air can get in. Three weeks after, open the room, and the light and air come in, except there where the wind would blow in too violently. And when you see that the matter is through cold, and has taken air enough, then shut up the door and windows as before. About eleven days after, open it again, and you shall find the room full of Bees clotted together, and nothing of the Ox remaining, beside the horns, the bones and the hair. They say that the kings of the companies are generated of the brain, the other of the flesh, but the chief kings of all, of the Marrow, yet those that come of the brain, are most of them greater, handsomer, and better-colored then the rest. When you open the room first, you shall find the flesh turned into small, white and unperfected creatures, all of the same shape, but as yet only growing, and not moving. Afterward, at the second opening, you may see their wings grown, the right color of Bees in them, and how they fit about their kings, and flutter about, especially toward the windows, where they would enjoy their desired light. But it is best to let them light by the windows every other day. This same experiment, Virgil has very elegantly set down in the same manner. Now as the best kind of Bees are generated of a young Ox, so a more base kind of them is brought forth of the dead flesh of baser creatures. Aelianus says;

"That Wasps are generated of an Horse,"

When his carcass is putrefied, the Marrow of him brings forth Wasps. A swift kind of fowl, from a swift kind of beast. Ovid says, that Hornets are thence generated, and Isidore derives crabronem a' cabo, id est caballo, a Hornet of a Horse, because they are brought forth of Horse. Pliny and Virgil say, that Wasps and Hornets both, are generated of the flesh of dead Horses. In like manner;

"Drones come of Mules,"

As Isidore affirms. And the Drone is called Fucus quafi Fagos, because he eats that which he never labored for. But others hold that the Locusts, and not Drones, are generated of Mule's flesh. So also, of the basest beast comes the basest fowl.

"The Beetle is generated of the Ass,"

As Pliny writes. Isidore says, they come of swift Dogs. Aelianus says, they have no female, but lay their feed in a clot of earth for 28 days, and then bring forth young out of it.

"Of certain Birds, which are generated of the Putrefaction of Plants."

Olaus Magnus, in the description of the north countries of Europe, reports that about Scotland, there be certain Birds generated of the fruit of a tree. Munster says, there are certain trees which bring forth a fruit covered over with leaves, which, if it fall into the water under it, at the right season, it lives, and becomes a quick bird, which is called *Avis arborea*. Neither is this any new tale, for the ancient Cosmographers, especially Saxo Grammaticus, mentions the same tree. Late writers report, that not only in Scotland, but in the River of Thames also by London, there is a kind of shellfish in a two-leafed shell, that has a foot full of plaits and wrinkles. These Fish are little, round, and outwardly white, smooth and brittle shelled, like an almond shell, inwardly they are great bellied, bred as it were of moss and mud. They commonly stick on the keel of some old ship, where they hang together like mushroom stalks, as if there were thereby nourished. Some say, they come of Worms, some of the boughs and branches of trees which fall into the sea, if any of these be cast upon shore, they die; but they which are swallowed still into the sea, live, and get out of their shell, and grow to be Ducks or such like Birds. Gesner says, that in the islands of Hebrides, the same;

"Birds are generated of putrefied wood."

If you cast wood into the sea, first after a while there will certain Worms breed in it, which by little and little become like Ducks, in the head, feet, wings and feathers, and at length grow to be as big as Geese. And when they are come to their full growth, they fly about in the air, as other birds do. As soon as the wood begins first to be putrefied, there appears a great many Worms, some unshaped, others being in some parts perfect, some having feathers, and some none. Paracelsus says, As the yolk and white of an Egg, becomes a chick by the heat of a Hen, so a bird burnt to ashes, and shut up in a vessel of Glass, and so laid under the mixture, will become a filmy humor, and then, if it be laid under a Hen, is enlivened by her heat, and restored to herself like a Phoenix. Ficinus reports, and he had it out of Albertus, that there is a certain bird, much like a Blackbird, which is generated of the Putrefaction of Sage, which receives her life and quickening from the general life of the whole world.

Chapter II

"Of Certain Fishes which are generated of Putrefaction."

Having first spoken of earthly creatures, and then of fowls, now we will speak of Fishes so generated. And first how;

"Eels are generated."

Among them there is neither male or female, nor Eggs, nor any copulation, neither there was there ever seen in any of them, any passage fit to be a womb. They have bred often in certain muddy pools, even after all the water and mud has been gone, only by rain-water. Neither indeed do they ever breed without rain, though they have never so much water otherwise, or it is the rain, both that

begets and nourishes them, as Aristotle writes. They are also generated of putrefied things. Experience that proved, that a dead Horse thrown into a standing pool, has brought forth a great store of Eels, and the like has been done by the carcasses of other creatures. Aristotle says, they are generated of the garbage of the earth, which he says, arises in the sea, in rivers, and in pools, by reason chiefly of Putrefaction, but it arises in the sea by reason of Reeds, in pool and rivers, it arises by the bank side, for there the heat is more forcible to cause Putrefaction. And a friend of mine filled certain wooden vessels with water, and Reeds, and some other water-herbs, and set them in the open air, having first covered them with a weighty stone, and so in short time generated Eels. Such is the generation of,

"Groundlings out of foam and froth,"

Which Fish the Greeks call Aphya, because rain breeds it. Many of them breed of the foam that rises out of the sandy channel, that still goes and comes at all times, till at last it is dissolved, so that this kind of Fish breeds all times of the year, in shadowy and warm places, when the soil is heated, as in Attica, near to Salamina, and in Marathon, where Themistocles got his famous victory. In some places, this Fish breeds of some by the help of the rain, and swims on the top of the water in the foam, as you see little worms creep on the top of the mud. Athenaus says, this Fish is consecrated to Venus, because she also comes of the froth of the sea, whence she is called Aphrodite. Aelianus says, these Fish neither do beget, nor are begotten, but only come of the mud. For when dirt is clotted together in the sea, it waxes very black and filmy, and then receives heat and life after a wonderful manner, and so is changed into very many living creatures, and namely into Groundlings. When the waves are too boisterous for him, he hides himself in the cleft of some rock, neither does he need any food. And Oppianus makes the very same description of him, and of their generation. There is a kind of these Fishes, called Mullet-Groundlings, which is generated of mud and sand, as has been tried in many marsh places, among the rest in Hindus, where in the Dog-days, the lakes, being dried up, so that the mud was hard, as soon as ever they began to be full of rain water again, were generated little Fishes, a kind of Mullet, about the bigness of little Cackrels, which had neither seed nor egg in them. And in some parts of Asia, at the mouth of the Rivers into the sea, some of a bigger size are generated. And as the Mullet-Groundlings comes of mud, or a sandy loam, as Aristotle writes, so it is to be thought, that the Cackrel-groundling comes thereof also. It seems too, that,

"A Carp is generated of Putrefaction,"

Especially of the putrefied mud of sweet water. For it is experienced, that in certain lakes, compassed about with hills, where there is no well, nor river, to moisten it, but only the rain, after some few showers, there has been great store of Fish, especially carp. But there are some of this kind generated by copulation. There are also in certain particular lakes, particular kinds of Fishes, as in the Lemane, and the Benacian lakes, there be diverse kind of Carp, and other such Fish. Likewise are certain,

"Earthly Fishes generated of Putrefaction."

Pliny reports, that in Paphlagonia, they dig out of deep ditches, certain earthly Fishes very good to be eaten, and it is so in places where there is no standing water, and he wonders that they should be generated without copulation. But surely it is by virtue of some moisture, which he ascribes to the wells, because in some of them Fishes are found. Likewise,

"Shellfish are generated of the frothy mud,"

Or else merely of the Saltwater, for they have neither seed, nor male, nor female, the hardness and closeness of their shells, hindering all things from touching or rubbing their inward parts, which might be fit for generation. Aristotle says, they breed all of themselves, which appears by this, that often they breed in ships, of a frothy mud putrefied. And in many places, where no such thing was before, many shellfishes have bred, when once the place waxed muddy, for lack of moisture. And that these Fishes emit no seed or generative matter, it appears, because that when the men of Chios, had brought out of Lesbos many oysters, and cast them into lakes near the sea, there were found no more then were cast in. Only they were somewhat greater. So then Oysters are generated in the sea, in rivers and in lakes, and therefore are called Limnosirea, because they breed in muddy places. Oppianus writes also, that they have neither male nor female, but are generated of themselves and their own accord, without the help of any copulation. So the Fish called Ortica, and the Purple, and Muscles, and Scallops, and Perwincles, and Limpins, and all shellfish are generated of mud. For they cannot couple together, but live only as plants live. And look how the mud differs, so does it bring forth different kinds of Fishes. Dirty mud genders Oysters, sandy mud Perwincles, the mud in the rocks breeds Holoturia, Lepades, and such-like. Limpins, as experience has shown, have bred of rotten hedges made to Fish by, and as soon as the hedges are gone, there have been found no more Limpins.

Chapter V

"That new kinds of living creatures may be generated of diverse beasts, by carnal copulation."

We have shown that living creatures are generated of Putrefaction. Now we will show, that sundry kinds of beasts coupling together, may bring forth new kinds of creatures, and these also may bring forth others, so that infinite monsters may be daily gendered. For whereas Aristotle says, that Africa always brings forth some new thing, the reason thereof is this, because the country being in most places dry, diverse kinds of beasts come out of sundry quarters thither, where the rivers were, and there partly for lust, and partly by constraint, coupled together, and so gendered diverse monstrous creatures. The Ancients have set down many such generations, and some are lately devised, or found out by chance, and what may be hereafter, let men of learning judge. neither let the opinions of some philosophers stay us, which hold that of two kinds diverse in nature, a third cannot be made, unlike to either of the parents, and that some creatures do not gender at all, as Mules do not. For we see, that, contrary to the first of these their positions, many creatures are generated of kinds diverse in nature, and of these are generated others, to the perpetual coupling together, have brought forth other new kinds, differing from their progenitors every day more and more, as they multiply their copulation's, till at length they are scarce in anything like the former. And against their second position, we must not think that the one example of Mules not gendering, should prejudice the common course of other creatures. The commissions or copulation's, have diverse uses in Physic, and in domestic affairs, and in hunting. For hereby many properties are conveyed into many creatures. First, we will rehearse those experiments, which the Ancients have described, and then those which new writers have recorded, and ourselves have seen in diverse countries. And by this, the ingenious reader may find out others. But first I will relate certain observations, which Aristotle and others have prescribed, that this generation may be more easily wrought. First, the creatures

thus coupled, must be of an equal pitch, for if there be great odds in their bigness, they cannot couple. A Dog and a Wolf, a Lion and a Panther, an Ass and a Horse, a Partridge and a Hen, are of one bigness, and therefore may couple together, but a Horse and a Dog, or a Mare and an Elephant, or a Hen and a Sparrow cannot. Secondly, they must have one and the same space to bring forth in. For if one of them bring forth in twelve months, and the other in six, then the young will be ripe by one side, when it is but half ripe by the other. A Dog must have two months, and a Horse must have twelve. And the philosopher says, no creature can be born, except he have his full time. So then a Dog cannot be born of a man, nor a Horse of an Elephant, because they differ in the time of their bearing. Again, the creatures which we would thus couple, must be one as lustful as the other. For a chaste creature, that uses coition but once a year, if he have not his female at that time, he loses his appetite before he can fancy any other mate. But those which are full of lust, will eagerly couple with another kind as well as their own. Among four-footed beasts, a Dog, a Goat, a Swine, an Ass, be most lascivious, among birds, Partridge, Quails, Dove, Sparrows. Moreover, they must be coupled at such a time as it fit for generation. For nature has prescribed certain times and ages fit for that work. The common time, is the Spring, then almost all creatures are prone to lust. The ages of them must likewise be fit. For the generative power comes to creatures, at a set age. Neither of them must be barren, not weak, nor too young, for then their seed is unfit for generation. But both of them, if it may be, in the prime of their best age and strength. If any creatures want appetite thereunto, there be many slights, whereby we may;

"Make them eager in lust."

And if the female do cast out the seed, there be means to make her hold in it. Encouragements to lust there are many set down by writers, and some usual with us. Aelianus writes, that the keeper of Sheep, and Goats, and Mares, do besmear their hands with Salt and Nitre, and then rub the generative parts of them in the time of their coition, for their more lustful and eager performance of that action. Others besmear them with Pepper, otherwise with Nettle seed, others with Myrrh and Nitre, all of them kindle the appetite of the female, being well rubbed therewith, and make her stand to her male. The He-goat, if you besmear their chin, and their nostrils with sweet ointment, are thereby much inclined to lust, and contrariwise, if you tie a thread about the middle of their tail, they are nothing so eager of copulation. Absyrtus shows, that if you wipe off some Nature or Seed of a Mare, and therewith besmear the nostrils of a Stallion Horse, it will make him very lustful. Dydimus says, that if a Ram, or any other beast, feed up the herb Milk-wort, they will become both eager to lust, and stronger for the act of copulation. Pliny shows, that Onions increase desire of copulation in beasts, as the herb Rotchet does in men. The She-ass, holds the seed within her the better, if presently after copulation she be well beaten, and her genitories besprinkled with cold water, to make her run after it. Many such helps are recorded by those who have written the histories of living creatures.

Chapter VI

"How there may be Dogs of great courage, and diverse rare properties, generated of diverse kinds of beasts."

We will first speak of Dogs, as being a most familiar creature with us, and suiting with many beasts, in bigness, in like time of breeding, and besides, being always ready for copulation, and very lecherous, often coupling with beasts of a far diverse kind, and so changes his shape and fashion, leaving the bad qualities of his own kind, and is made fitter to hunt, to keep anything from spoil, to play or make sport, and for diverse other uses. And first how:

"A strong Indian-dog may be generated of a Tygre."

This is called by some a Mastiff, by others a Warrior, or a Hircan-Dog. Aristotle calls them Indian-dogs, and says, they are generated of a Dog and a Tygre, and elsewhere, of a Dog and another wild beast, but he names it not. Pliny writes, that the Indians intending to generate Dogs of Tygres, tie the She-Tygre in the woods about rutting time, and Dog coupling with them engender young. But the first and second births they care not for, as being too fierce, but the third they bring up, as being milder and fitter for their uses. Aelianus relates the story of this kind of Dog, out of Indian writers. That the stoutest bitches, and such as are swiftest to run, and best to hunt, are by the shepherds tied to certain trees within the Tygres walk. As soon as the Tygres light upon them, if they have not before met with their prey, they devour them, but if they be full of meat, and hot in lust, then they couple with the bitches, and so generate, not a tiered, but a Dog, their seed degenerating into the mothers kind. And these Dogs thus gendered, scorn to hunt a Boar, or a Hart, but a Lion they will set gallantly upon. A noble man of India made trial of the valor of these Dogs, before Alexander the Great, on this manner. First he set an Hart before him, but the Dog scorning the Hart, stirred not at him, next a Boar, but neither stirred he at the Boar, after that a Bear, but he scorned the Bear too. Last of all, a Lion, then the Dog seeing that he had an even match in hand, rose up very furiously, and run upon the Lion, and took him by the throat, and stifled him. Then the Indian that showed this sport, and knew well this Dogs valor, first cut off his tail, but the Dog cared not for his tail, in comparison of the Lion which he had in his mouth. Next, he cut off one of his legs, but the Dog held fast his hold still, as if it had been none of his legs. After that, he caused another of his legs to be broken, but the Dog still kept his hold. After that, his third leg, and yet still he kept his hold. After that, his fourth leg, and his head was cut off from his body, yet still it stuck fast by the teeth in the same place, where he took his first hold. Alexander seeing this, was much grieved for the Dogs death, and greatly amazed at his valor, that he would rather suffer his life, then his courage to be taken from him. The Indian perceiving that, gave to Alexander four such Dogs, and he received them as a great present, and accepted them gladly and thankfully. And moreover, rewarded the Indian that gave them with a Princely recompense. The same story Philes also writes. But Diodorus Siculus and Strabo, say that Sopithes a King, gave Alexander an hundred and fifty of these Dogs, all very huge and strong, and usually coupling with Tygres. And Pollux writes the same. And Plutark describes the Indian-dog, and his fight before Alexander, as it is before related. Pliny writes, that the King of Albania gave Alexander a great Dog, wherewith he was much delighted. But when he brought the Dog, first bears, then Boars, and then Deer, and saw he would not touch them, being much offended that so great a body should have so little courage, he caused him to be killed. The King that gave him, hearing this, sent him another, and withal charged the messenger, that he should not be tried in small matches, but either with a Lion or an Elephant. So then, Alexander caused a Lion to be set before him, and presently the Dog killed him. Afterward he tried him with an Elephant, and the Dog bristled and barked at him, and assaulted him so artificially every way, till the Elephant was giddy with turning about, and so fell down and was killed. Gratius writes of this kind of Dog, thus generated of a Bitch and a Tyger. There is also another kind of Dog,

"Generated of a Lion ."

And these are strong Dogs, and good hunters. Pollux says, that Arcadian dogs first came of a Dog

and a Lion, and called Lion-Dogs. And Coelius writes the same. And Oppianus commends the Arcadian dogs, and those of Tegea, which is a town of Acadia. This also

"A strong and swift Dog gendered of a kind of Wolf called Thos,"

which, as Aristotle writes, is in all his entrails like a Wolf's, and is a strong beast, swift, and is wont to encounter a Lion. Pliny says, it is kind of Wolf, Hesychius says, it is like a Wolf, Herodotus, that it is gendered in Africa. Solinus called them Ethiopian Wolves. Nearchus calls these beasts Tygres, and says there be diverse kinds of them. Wherefore Gratius says, that Dogs generated of these Thoes, are strong, and fit to hunt, and calls them half-savage, as coming of a tame Dog, and a savage kind of Wolf. There is also a,

"Dog called Crocuta, gendered of a Dog and a Wolf."

Pliny says, that these Dogs break all things with their teeth, and presently devour them. As the Indians join Tygres, so do the Gauls join Wolves and Dogs together, every herd of wolves there, has a Dog for their ring-leader. In the Country of Cyrene in Libya, Wolves do couple with Dogs, as Aristotle and Pollux write. Galen, in his book concerning the use of parts, writes, that a Bitch and may conceive by a He-wolf, and so the She-wolf by a Dog, and retain each others seed, and ripen it to the bringing forth of both kinds. Diodorus says, that the Dog which the Ethiopian calls Crocuta, is a compound of the nature of a Dog and Wolf. When Niphus was hunting, one of his Dogs eagerly pursued a she-wolf, and overtaking her, began to line her, changing his fierceness into lust. Albertus says, that the great Dog called a mastiff, is gendered of a Dog and a Wolf. I myself saw at Rome, a Dog generated of a Wolf, and at Naples, a she-wolf of a Dog. Ovid says, that the Dog Nape was conceived of a Wolf, and Ovid and Virgil both, mention the Dog Lycisca, which, as Isidore writes, are generated of Wolves and Dogs coupling together. Coelius called these Dogs Chanides, being gendered of a kind of Wolf called Chaos, as some suppose, whence they have that name. But if we would generate swift Dogs, as greyhounds, we must join Dogs with some swift beasts. As, couple Dogs and Foxes together, and they will,

"Gender swift Dogs, called Lacedamonian Dogs."

Aristotle, and out of him Galen, report, that beasts may couple together, though they be of a diverse kind, so that their nature do not much differ, and they be of a like bigness, and thereby suitable for their times of breeding and bringing forth, as it is between Dogs and Wolves, of both which, are gendered swift Dogs, called Lacedaemonian dogs. The first births are of both kinds, but in time, after sundry interchangeable generations, they take after the Dam, and follow the kind of the female. Pollux says, these are called Alopecidae, Fox-dogs, as Xenophon also writes of them, and makes them to be hunting Dogs. And surely the best and swiftest hunting Dogs, as greyhounds, are long-headed, and sharp-snouted, as foxes are. Hesychius and Varinus call them Dog-foxes. But now, if we would generate a kind of,

"Swift Dogs, and strong withal,"

we must make a medley of sundry kinds of Dogs together; as a Mastive and a Greyhound gender a swift, and withal a strong Dog, as Aristotle writes, or else couple a Dog with a wolf, or with a Lion, for both these mixtures have hunts-men deviled, the former, to amend certain natural defects in one kind; and the latter, to make their Dogs stronger for the game, and craftier to spy and take advantage; as commonly, together with the properties of the body, the qualities of the mind are derived into the young ones. Ovid mentions such mongrels among Aetaon's Dogs. And Oppianus in

his book of hunting, counsels to join the spring-time, diverse Dogs together, if we desire to have any excellent parts in any. As the Dogs of Elis, with them of Arcadia, the Dogs of Crete, with them of Pannonia, Thracians, with them of Caria, Lacedamonian with them of Tuscia, and sarmatian Dogs, with Spanish Dogs. Thus we see, how to generate a Dog as stomachful as a Lion, as fierce as a Tygre, as crafty as a Fox, as spotted as a Leopard, and as ravenous as a Wolf.

Chapter VII

"How to generate pretty little Dogs to play with."

Because a Dog is such a familiar creature with man, therefore we will show how to generate and bring up a little Dog, and one that will be playful. First of the generation,

"Of little Dogs."

In times past, women were wont to esteem little Dogs in great price, especially such as came from Malta the island situated in the Adriatic Sea, near to Ragusius. Calimacus terms them with Melitean dogs. And Aristotle in his 'Problems,' shows the manner of their generation, where he questions, why among living creatures of the same kind, some have greater, and some have smaller bodies, and there, gives two reasons: one, is the straightness of the place where they are kept; the other, is the scarceness of their nourishment, and some have attempted to lessen the bodies of them, even after their birth, as they which nourish up little Whelps in small cages, for thereby they shorten and lessen their bodies, but their parts are prettily well knit together, as appears in Melitean dogs, for nature performs her work, notwithstanding the place. Athenaus writes, that the Sybarites were much delighted with Melitean dogs, which are such in the kind of Dogs, as dwarfs are among men. They are much made of, and daintily kept, rather for pleasure then for any use. Those that are chosen for such purpose, are of the smallest pitch, no bigger at their best growth then a mouse, in body well set, having a little head, a small snout, the nose turning upward, bent so for the purpose when they were young; long ears, short legs, narrow feet, tail somewhat long, a shagged neck, with long hair to the shoulders, the other parts being as it were shorn, in color white, and some of them are shagged all over. These being shut up in a cage, you must feed very sparingly, that they never have their fill, and let them couple with the least you can find, that so less may be generated, for so Hippocrates writes, that Northern people, by handling the heads of Dogs while they be young, make them less then, and so they remain even after they are come to their full growth, and in this shape they gender others, so that they make, as it were, another kind. But if you would know the generation of a ...

"Dog that will do tricks and feats,"

One that will make sport of himself, and leap up and down, and bark softly, and gnaw without biting, and stand upon his rear legs, holding forth his other legs like hands, and will fetch and carry, you must first let them converse and company with an Ape, of whom they will learn many sportful tricks, and let them line the ape, and the young one which is born of them two, will be exceeding practiced

to do feats, such as jugglers and players are wont to show by their Dogs. Albertus says, that these kind of Dogs may very well be generated of a Dog and a Fox.

Chapter VIII

"How to amend the defects and lacks that are in Dogs, by other means."

We may also supply the lacks that are in Dogs, by other means, and teach them new qualities, even by their food and nourishment, for we have shown often, that qualities are drawn in together with the milk and nourishment whereby we live. Columella shows how;

"To make Dogs strong and swift."

If you would have them full of stout spirits, you must suffer them to suck the breasts of some other beasts, for always the milk, and the spirits of the nurse, are much available, both for the quality of the body, and the qualities of the soul. Oppianus bids us to keep hunting Dogs from sucking any ordinary bitches, or Goats, or Sheep, for this, says he, will make them too lazy and weak, but they must suck a tame Lioness, or Hart, or Doe, for so they will become swift and strong, like to their nurses that give them suck. And Aelianus gives us the very same precept, in the very same words, or , says he, then they shall remember that they had such strong swift nurses, nature will make them ashamed not to resemble their qualities. Pollux says, that for a while, the Dams milk is fittest meat for Whelps, but after, let them lap the blood of those beasts which Dogs have caught, that by little and little they may be acquainted with the sweetness of hunting. Ctefias in his book of Indian matters, writes, that the people called Cynamolgi, do nourish and feed many Dogs with Bulls blood, which afterward being let loose at the Bulls of India, overcome them and kill them, though they be never so fierce, and the people themselves milk their bitches, and drink it, as we drink Goats or Sheep milk, as Aelianus reports, and Solinus writes, that this is supposed to make that people flap-mouthed and to grin like Dogs. We may also make...

"An Ass become courageous,"

If we take him as soon as he is brought forth into the world, and put him to a Mare in the dark, that she may not discern him, for her own colt being secretly taken from her, she will give suck to the Ass as to her own foal, and when she has done thus for the space of ten days, she will give suck always after willingly, though she know him to be none of hers. Thus shall he be larger, and better in every way.

Chapter IX

"How to bring forth diverse kinds of Mules."

We will speak of the commixtion of Asses, Horses, and such like, though it be a known matter, yet it may be we shall add something which may delight the reader. Aelianus writes out of Democritus, that Mules are not nature's work, but a kind of theft and adultery devised by man, first committed by an Ass of Media, that by force covered a mare, and by chance got her with foal, which violence men learned of him, and after made a custom of it. Homer's Scholiast says, that Mules were first devised by the Venetians, a city of Paphlagonia. It is written in Genesis, chap. 36. v. 24 that Anah, Esau's kinsman, feeding his fathers Asses in the wilderness, found out Mules. How...

"A Mule comes from a Mare and an Ass ."

They have no root in their own kind, but are grassed as it were, and double-kinded, as Varro says. If you would have a strong and a big Mule, you must chose a Mare of the largest size, and well-knit joints, not regarding her swiftness, but her strength. But there is another kind of Mule called Hinnus, that comes...

"...Of a Horse and a She-ass."

But here special choice must be made of the Ass that she be of the largest size, strongly jointed, and able to endure any labor, and of good qualities also, for howsoever it is the sire that gives the name to the young one, and it is called Hinnus, of the Horse, yet it grows altogether like the Dam, having the main and the tail of an Ass, but horses ears, and it is not so great of body as the Mule is, but much slower, and much wilder. But the best She-mules of all, are generated...

"...of a wild Ass, and of a She-ass,"

And these are the swiftest too, for though the muse that is begotten by the He-ass, be both in shape and qualities very excellent in his kind, yet that which is begotten of the wild Ass, comes nothing behind the other, but only that is the unruly and stubborn, and somewhat scammel, like the sire. These Mules thus gendered of a wild Ass, and a She-ass, if they be males, and put to cover a mare, beget excellent young ones, which by little and little wax team, resembling the shape and mildness of their sire, but the stomach and swiftness of their grand-sire; and they have exceeding hard feet, as Columella writes. These happily are the Mules which Aristotle writes, are only in Syria, swift, and fertile, called by the common name of Mules, because of their shape, though their kind be of a wild Ass. But there is a more common kind of...

"Strong Mules gendered of a bull and an Ass..."

Which is a fourth sort of Mule found in Gratianopolis, and called by a French name, Jumar. Gesner reports, that at the foot of the Hill Spelungus in Rhetia, was seen a Horses gendered of a Mare and a Bull. And I myself saw at Ferrara, certain beasts in the shape of a Mule, but they had a bulls head, and two great knobs in stead of horns, they also a bulls eyes, and were exceeding stomachful, and their color was black, a spectacle, wherewith we were much delighted. I have heard, that in France, they be common, but I could see none there, though I passed through the whole country.

Chapter X

"How to mingle the Sheep and Goats together, by Generation."

If we would better any qualities in a Ram, we must effect it by coupling them with wild beasts, such as are not much unlike either in quantity or in kind. There is a beast called...

"Musimones, gendered of a Goat and a Ram"

Pliny says, that in Spain, but especially in Corsica, there are beasts called Musimones not much unlike to Sheep, which have Goats hair, but in other parts, Sheep; the young ones which are gendered of them, coupling with Sheep, are called by the Ancients, Umbri. Strabo calls them Musimones. But Albertus calls them Musini or Musimones, which are gendered of a Goat and a Ram. I have heard that in Rhetia, in Helvetian confines, there are generated certain beasts, which are Goats in the hinder parts, but in the former parts, Sheep or Rams; but they cannot live long, but commonly they die, as soon as they are born. And that there the Rams being grown in years, are very strong and lustful, and so often times meet with Goats, do run over them, and that the young ones which wild Rams beget of tame Sheep, are color like the sire, and so is their breed after them; and the wool of the first breed is shaggy, but in their after-breed soft and tender. On the other side, there is a beast called ...

"Cinirus, generated of a He-goat, and an Ewe, "

as the same Albertus writes of. But the best devised adultery is, to couple in generation, and thereby to procreate young ones, of a wild and a tame Goat . Writers affirm, that whatsoever kind has some wild, and some tame, the wildness of them, if they couple with the tame of the same kind, is altered in the succeeding generations; for they become tame. Columella writes, that many wild Rams were brought out of Africa into Cales, by some that set out games before the people, and Columella, the uncle of this writer, bought some of them, and put them into his grounds; and when they were somewhat tame, he let them cover his ewes. And these brought lambs that were rough, and had the color of their sire. But these then afterward coupling with the Ewes of Tarentum, begot lambs that had a thinner and a softer fleece. And afterward, all their succeeding generations resembled the color of their sires, and grand-sires, but the gentleness and the softness of their Dams. The like is experienced in Swine. For we may bring forth..

"Of a wild and a tame Swine, the beast called Hybrides:"

for a Boar is exceeding hot is lust, and wonderfully desires coition, inasmuch, that if the female refuses to couple with him, either he will force her, or kill her. And surely howsoever, some wild beasts being made tame, are thereby unfit for generation as a Goose, a Hart brought up by hand from his birth, and a Boar is hardly fruitful in such a case. Yet there is no kind so apt for generation,

the one being wild, and the other tame, as the kind of Swine is. And those which are thus gendered, these half-wilds, are called Hybrides, happily because there are generated in reproachful adultery. For hybris signifies reproach.

Chapter XI

"Of some other commixtions, whereby other beasts of diverse kinds are generated."

We will speak yet farther of the commixtion of diverse beasts differing in kind, as also of other mixtures derived from these, so to find out all such kinds.. And moreover we will show, that of their young, some take after the sire most, and some after the Dam. An first, that ...

"A Leopard is gendered of a Libard and a Lioness."

The Lioness is reported to burn in lust, and because the Lion is not so fit for copulation, by reason of his superfluity of heat, therefore she entertains the Libard into the Lions bed. But when her time of bringing forth draws near, she gets away into the mountains, and such places there the Libard haunt. For they bring forth spotted Whelps, and therefore nurse them in thick woods very covertly, making show to the Lions, that they go abroad only to seek some prey. For if the Lions at any time light upon the Whelps, they tear them in pieces, as being a bastard brood, as Philostratus writes. In the wilds of Hircania, there are Leopards, as it were, another kind of Panthers, which are known well enough, which couple the Lioness, and beget Lions, but they are but base Lions, as Solinus writes. Isidore says that the Libard and the Lioness coupling together, procreate a Leopard, and so make a third kind. Pliny says, that those Lions which are generated of Libards, do want the mones of Lions. And Solinus says, that the Lion can find out by his smell, when the Lioness has played the harlot, and seeks to revenge it upon her with all his might. And therefore the Lioness washes herself in some river, or else keeps aloof from him, till the scent is no longer discernible. Now as there are two sorts of Mules, one a Horse and an Ass an the other of an Ass and a mare, so there are two sorts of Leopards, one of a Libard and a Lioness, the other of a Lion and a Panther, or She-libard; that is in body like a Lion, but not in courage, this is in body and color like a Libard, but not in stomach; for all double-kindred creatures, take most after their mother, especially for shape and quantity of their bodies. Claudianus says, that there is a kind of Libard, which he calls a Water-libard, that is gendered of a mingled seed, when a strong and vigorous Libard meets with a Lioness, and happily couples with her; and this kind of Libard is like the sire for his spots, but his back and the proportion of his body is like his Dam. Now there is another copulation of the Lioness, when the...

"Hyena and the Lioness gender the beast Crocuta..."

for the Lioness is very furious in lust, (as we have shown before) and couples with diverse kinds of beasts. For Pliny writes, and Solinus writes the same, that the Hyena and the Lioness of Ethiopia, gender the beast Crocuta. Likewise the panther is a most lustful beast, and she also couples with beasts of diverse kinds, with a wolf especially, of both which, the...

"Hycopanther, or beast called Thoes, is gendered..."

for the Panther, when her breeding time has come, goes up and down, and makes a great noise, and thereby assembles many, both of her own kind, and of other kinds also. And among the rest, the Wolf often meets and couples with her, and from them is generated the beast Thoes, which resembles the Dam in the spots of his skin, but in his looks he resembles the sire. Oppianus says, that the Panther and the Wolf do gender this Thoes, and yet he is of neither kind. For, says he, often the Wolf comes to the Panther 's den, and couples with her, and thence is generated the Thoes, whose skin is very hard, and is meddled with both their shapes, skinned like a panther, and headed like a Wolf. There is also a Thoes gendered of a Wolf and a female Hyena. This medley, Hesychius and Varinus have described. That of them comes this Thoes, as the Greeks call it. The Scholiast upon Homer say, that is like to the Hyena. And some call it Chaos. Pliny says, that this Chaos, which by the French is called Raphium, was first set forth for a show in the games of Pompeii the Great. And that it had spots like a Leopard, but is fashioned like a wolf. But the Greeks make mention of a very strange adultery, that,

"The Baetrian Camel is gendered of a camel and a Swine.."

Didymus, in his works called Geoponica, reports, that in certain mountains in India, Boars and Camels feed together, and so fall to copulation, and gender a Camel. And this Camel so gendered, has a double rifting, or two bunches upon his back. But as the Mule which is generated of a Horse and an Ass, is in many qualities like the sire, so the Camel which is begotten of a Boars, is strong and full of stiff bristles like a Boar, and is not so soon down in the mud as other Camels are, but helps himself out lustily by his own force, and will carry twice so great a burden as others. But the reason of their name, why they are called Baetrian camel, is this, because the first that ever was so generated, was bred in the country of Baetria.

Chapter XII

"Of sundry copulation's, whereby a man genders with sundry kinds of beasts."

I am much ashamed to speak of it, that man being the chief of all living creatures, should so foully disparage himself, as to couple with brute beasts, and procreate so man half-savage monsters as are often seen. Wherein man shows himself to be worse then a beast. I will relate some few examples hereof, thereby to make such wicked wretches an obloquy to the world, and their names odious to others. Plutark says, that brute beasts fall not in love with any, but of their own kind, but man is so incensed with lust, that he is not ashamed most villanously to couple himself with mares and goats, and other beasts, for man is of all other creatures most lecherous, at all seasons fit and ready for copulation, and besides, agrees with many living creatures in his time of breeding. All which circumstances make much for the producing of monstrous, and half-savage broods. And howsoever the mater we speak is abominable, yet it is not fruitless, but helps much to the knowledge of some other things in the searching out of the secrecy's of nature. Plutark in his Tract, which he calls the Banquet of the wise men, shows that a shepherd brought in the house of Periander,

"A babe gendered of a man and a Mare..."

Which had the hands, and neck, and head of a man, but otherwise it was like a Horse, and it cried like a young child. Thales, as soon as he saw it, told Periander, that he did not esteem it as a strange and monstrous thing, which the gods had sent to portend and betoken the sedition's and commotion's likely to ensue, as Diocese thought of it, but rather as a natural thing. And therefore, his advice was, that either they should have no Horse-keepers, or if they had, they should have wives of their own. The same author (Thales) in his 'Parallels,' reports out of Agesilaus, his third book of Italian matters, that Fulvius Stella loathing the company of a woman, coupled himself with a Mare, of whom he begot a very beautiful maiden-child, and she was called by a fit name, Epona. And the same Plutark reports also of...

"A maiden that was generated of a Man and an Ass;"

for Aristonymus Ephesius, the son of Demonstratus, could not away with a woman's company, but made choice of an ass to lie with; and she brought him forth after a certain time, a very comely maiden, and was exceeding beautiful. She was called Onoscelis, that is to say, one having Ass's thighs. And this story was gathered out of Aristotle, in the second of his paradoxes. But Galen cannot think this possible, nay, it is scarce possible in nature, seeing a man and an ass differ so much as they do. For if a man should have to do with an Ass, her womb cannot receive his seed, because his genitories are not long enough to convey it into her place of conception. Or if it were, yet she would presently, or at least no long after, mar his seed. Or, if she could so conceive, and bring her birth to perfection, how, or by what food should it be nourished after birth? But, though can hardly be, yet I do not think it altogether impossible, seeing all men are not of a like complexion, but some may be found, whose complexion does not much differ from Horses, and some men also have longer and larger genitories then others have, as also some mares and asses have less and shorter genitories then other have. And it may be to, that some celestial influence has a stroke in it, by enlivening the seed, and causing the Dam to conceive it, and bring it forth in due time. And because all these things do very seldom concur together, therefore such births are very seldom seen. Aelianus writes another story, that there was once generated...

"A half-beast of a Man and a Goat."

There was a certain young man in Sybaris, who was called Crachis, a luster after Goats. And being over-ruled by his lust, coupled himself with a fair Goat, the fairest he could light upon, and lived with her as his love and Concubine, bestowing many gifts upon her, as Ivy and Rushes to eat, and kept her mouth very sweet, that he might kiss her. He laid under her soft grass, that she might lie easy, and sleep the better. The He-goat, the ring-leader of the herd, seeing all this, watched his time when the young man was asleep, and fell upon him and spoiled him. But the She-goat, when her time was come, brought forth an infant that had the face of a man, but the thighs of a goat. The same author writes, that...

"Women lie with He-goats, and with the Cynocephali..."

For the He-goat are so lecherous, that in the madness of their lust, they will set upon Virgins, and by force ravish them. Herodotus in second book, writes of a He-goat, that had to do with a woman openly, and in the sight of many men standing by. Strabo says, that in the Mediterranean Sea, a little without the mouth of a river near to Sebenis and Pharnix, there is an island called Xoas, and a city within the Province of Sebenis, and the Cities Hermopolis and Mendes, where Pan is honored for a god, and with him is likewise honored a He-goat, and there, as Pindarus reports, He-goat have to do with women. In the utmost corner of the winding river Nilus, says he, are fed certain herds of Goats, and there the lecherous He-goat are mingled with women. Aelianus also writes of the Indians, and

they will not admit into their cities any Red Apes, because they are often mad in lust towards women, and if at any time they find such Apes, they hunt and destroy them as being adulterous beasts. Pliny writes also, that...

"Man couples with diverse kinds of beasts..."

For some of the Indians have usual company with brute beasts, and that which is so generated, is half a beast, and half a man.

Chapter XIII

"That diverse kinds of birds may be generated of diverse birds coupling together."

Before we come to speak of the commixtion of Birds, it is meant to prescribe certain observations for the more easy creating thereof. That if we have need to supply any defects in any Birds, we may be the better instructed how to perform it readily, to make them fitter for our uses. We showed before out of Aristotle, that if we would mingle creatures of diverse kinds, we must see that they be of like bigness, of a like proportion of time for their breeding, of a like color, but especially, that they be very lecherous, or otherwise they will hardly insert themselves into a strange flock. If a falconer be desirous to produce fighting Hawks, or Cocks, or other Birds, he must first seek out good lusty males, such as be strong and stomachful, that they may derive the same qualities into their young ones. Next, they must procure strong and courageous females. For if but one of them be stomachful, the young ones will rather take after the fullness and faint-heart of the one, and after the quickness and courage of the other. When you have thus made choice of the best breeders, before their copulation, you must keep them together within doors, and bring them by little and little acquainted with each other, which you may best do, by causing them to feed and live together. Therefore you must prepare a pretty little cottage, about ten foot long, and ten foot broad, and let all the windows be made out toward the south, so that there may be good store of light come in the top of the house. In the middle you must make a partition with lattices or grates, made of osiers. And let the rods stand so far asunder, as that the Birds head and neck may go in between them. And in one side of the room, let the bird be alone by her self, which you would make tame, in the other side, put the other Birds which you purpose to join in copulation with the strange bird. So then, in the prime of the Spring, (for that is the time wherein all creatures are most eager in lust) you must get you fruitful Birds, and let them be of the same color, as the bird which you desire to become tame. These you must keep certain days at the same brood as it were, and give them their meat together, so that the strange bird may come at it through the grate. For by this means she will learn to be acquainted with them, as with her fellows, and will live quietly by them, being as it were kept in prison from doing them any wrong, whereas otherwise she would be so fierce upon the, that she would spare none, but if she could, destroy them all. But when once by tract of time, and continual acquaintance with his fellows, this male-bird is become somewhat gentle, look which of the females he is most familiar with, let her be put in the same room where he is, and give them both meat enough. And because commonly he either kills, or does not care for the first female that is put unto him, therefore, lest the keeper should lose all his hope, he must keep diverse females for supply. When you perceive that he has gotten the female with young, presently you must divorce one of them from the other, and let him in a new mate, that he may fill her before you must feed her well till she begins to sit on her Eggs,

or put the Eggs under some other that is sitting. And thus shall you have a young one, in all respects like the cock. But as soon as the young ones are out of the shell, let them be brought up by themselves, not of their mother, but of some other hen-bird. Last of all, the females of this brood, when they be come to ripeness, that they stand to their cock, their first of their second brood will be a very exact and absolute kind.

Chapter XIV

"Diverse commixtions of Hens with other Birds."

We will begin with Hens, because they are in great request with us, and as household-Birds, always before our eyes, and besides, they may be very profitable and gainful, if we can tell how to procreate and bring up diverse kinds of them. Cocks are of all other most lecherous, and they spend their seed, not only at the sight of their Hens, but even when they hear them crake or cackle, and to repress their lust, they are often carved. They tread and fall to their sport, almost all year long. Some Hens are very lusty, and withal very fruitful, inasmuch that they lay three-score Eggs, before they sit to hatch them. Yes, some that are kept in a pen, do lay twice in one day, and some bring forth such store of Eggs, that they consume themselves thereby, and die upon it. We will first show...

"How to couple a Partridge with a Hen."

Partridges are much given to lust, and very eager of coition, and are mingled with other Birds of diverse kinds, and they couple between themselves, and so have young ones, as first with hens, of whom they procreate certain Birds, which partake of both kinds in common, for the first brood, but in process of time, when diverse generations have successively passed, they take merely after the mother in all respects, as Aristotle writes. The field-cocks are usually more lustful then household cocks are, and they tread their Hens as soon as ever they are off the roost. But the Hens are more inclined to coition, about the middle of the day, as Athenaus writes, out of Aelianus and Theophrastus. Of which circumstances we may take our best advantage in coupling them with Partridges. After the same manner...

"A Hen and a Pheasant may gender together..."

As Florentinus writes, the Pheasant and the Hen agree both in their time of laying, either of them bringing forth Eggs one and twenty days after conception. And though she be not so wanton as other Birds are, yet in their treading time they are glad of coition, and not very wild, especially those that are of the smaller sort. For these may easily be made tame, and suffered to go among hens, but at their first taking they are very fierce, and will often not only kill hens, but even Peacocks also. Some men bring up Pheasants to make a game of them. But some breed them for delight and pleasure, as I saw at Ferraria in the Princes Court, where was brought up very great store, both of Hens and Pheasants also. And this has been an old practice. For in Athenaus we find a saying of Ptolomy, that not only pheasants were sent for out of Media, but the country Hens, they also

afforded good store of them, the Eggs being conceived in them by the treading of a cock-pheasant. First then, you must take a Cock-pheasant, and be very careful in keeping him tame among your Hens, after that you must seek out country-hens of diverse colors, as like the color of the hen-pheasant as you can, and let them live with the Cock-pheasant, that in the springtime he may tread the hens, and they will bring forth speckled Eggs, everywhere full of black spots, far greater and better then other Eggs are. When these are hatched, you must bring up the Chickens with Barley-flour, and some leaves of Smallage shred among it. For this is the most delightful and nourishing food that they can have. There is also....

"A Chick gendered of a Pigeon and a Hen:"

The Pigeon must be young, for then he has more heat and desire of copulation, and much abundance of seed, for if he is old, he cannot tread. But young pigeons do couple at all times, and they bring forth both Summer and Winter. I had my self at home a single Pigeon, and a Hen that had lost her Cock. The Pigeon was of a large size, and wanton withal, the hen was but a very small one. These lived together and in the spring-time the Pigeon trod the hen, whereby she conceived, and in her due season laid Eggs, and afterward hatched them, and brought forth chicken that were mixed of either kind, and resembled the shape of them both. In greatness of body, in fashion of head and bill, they were like a Pigeon; their feathers very white and curled, their feet like a Hens feet, but they were overgrown with feathers, and they made a noise like a Pigeon. And I took great pleasure in them, the rather, because they were so familiar, that they would still sit upon the bed, or muzzle into some woman's bosom. But there is yet another mixture, when...

"A Cock , and a Pea, gender the Gallo-Pavus;"

Which is otherwise called the Indian-hen, being mixed of a Cock and a Pea (hen), though the shape of it is more like the Pea then the Cock.

Chapter XV

"How to generate Hawks of diverse properties"

We will show some commixtions of Hawks, by the example whereof, you may imagine of yourself the like in other Birds. And here it shall appear how we may amend diverse faults and defects in Hawks, and engross in them some new qualities to be derived from there sundry progenitors. And first, how...

"The bird Theocronus is gendered of a Hawk and an Eagle."

Hawks are exceeding hot in lust, and though there be diverse kinds of them, yet they all couple together among themselves without any difference, as Aristotle writes, they couple with Eagles, and thereby engender bastard Eagles. Eagles are most lecherous. And whereas among other creatures, the female is not always ready and willing to yield the male for coition. Yet the Eagles never refuse it. Aelianus accounts ordinary and common hawks in the kind of Eagles. Oppianus in his Ixeutica says,

that there is a bird known well enough, called Theocronus, which is generated of a male Hawk, and a female Eagle. There is a kind of Hawk so wholly given over to lust, that in the spring they loose all their strength. She is so lusty, that she flies up and down to revenge herself upon those little Birds, and as many of them as she catches, she devours. If the male of this kind do but hear the voice of the female Eagle, presently he flies to her, and they couple together. But he Eggs which she conceives by this base copulation, she scorns to hatch and sit upon. And that she may not be known of it to the male Eagle, she flies far away from him. For the male Eagle, if once he perceive that she has played the harlot, divorces her from him, and is thoroughly revenged upon her. These Birds are now commonly called Sea-eagles. There is also a commixtion, whereby the Hawk mingles himself,

"With a Falcon, and with a Buzzard, and the Eagle Nifus..."

For Hawks do not only couple with their own kind, but with Falcons, Buzzards, and Eagles of diverse kinds, as also with most of those fowls that live upon the prey and spoil of other Birds, and according to the diversity of those kinds, diverse kinds of Hawks are generated. Besides, they couple with strange Falcons of other countries, and other kinds. For as soon as they be hatched and pin-feathered, if their parents see that they are not right Falcons, presently they beat them away, and so partly because they cannot endure their parents rage, and partly to get their living, they fly away into strange places, and their finding no mates of their own kind, they seek out a mate of another kind, the most like to her own that she can meet with, and couples with them. So then, if you have Hawks that descend from the right and best kind, they are more easily worked with, then those that come from a baser sort. In like manner there may be generated of diverse kinds of fowl, as,

"The Osprey, the fowl called Ossidrugi, and Ravens also."

Pliny discussing the Osprey, says, that they have no proper kind of their own, but are descended from different sorts of eagles mingled together. And that which comes out of the Osprey, is of the kind of Ossidrugi, and that which comes of the Ossifragi, is a kind of little Raven, and of these afterward is generated a kind of great Raven, which have no offspring at all. The author of which assertions before Pliny, was Aristotle in his book of wonders. Oppianus says, that land-eagles are a bastard brood, which their parents beat out of their nests, and so they are for a while nourished by some other fowl, till at length they forsake the land, and seek their living in the sea.

Chapter XVI

"Of the commixtion of diverse kinds of Fishes"

It is a very hard thing for a man to know, whether divers kinds of Fishes be mingled together or no, because they live altogether under the waters, so that we cannot observe their doings. Especially such as they practice against the ordinary course of nature. But if we rightly consider that which has been spoken before, we may easily effect their commixtion, namely, if we take such Fishes as are much given to venery, and match those together which are alike in bigness. In time of breeding, and in other such conditions as were before required. Aristotle in his book of living creatures, says, that divers Fishes in kind never mingle their seed together. Neither did ever any man see two Fishes of

divers kinds couple in generation, excepting only these two,

"The Skate and the Ray, which engender the Rhinobatos"

which is so called of both his parents names compounded together. And out of Aristotle, Pliny reports, that no Fish of different kinds mingle their seeds, save only the Skate and the Ray, of both which is gendered the Fish Rhinobatos, which is like the Ray in all his former parts, and has his name in Greek answerable to his nature. For it is compounded of the names of both his parents. And of this kind of Fish I never read nor heard anything besides this. Theodorus Gaza translates the word 'Rhinobatos' into 'Squatino-raia' in Latin, that is a Skate-ray. And though some deny that there is any such Fish surely it is found in the sea about Naples. And Simon Portus, a very learned philosopher of Naples, did help me to the sight of one of them, and the picture therefore is yet reserved, and it is to be seen.

Chapter XVII

"How we may produce new and Strange Monsters."

Strange and wonderful monsters, and abortments, or untimely births, may be gendered of living creatures, as by those ways of which we spoke of before, namely, the commixtion of diverse kinds, so also by other means, as by the mixture of diverse seeds in one womb, by imagination, or such like causes. Concerning imagination, we will speak hereafter. Now at this time let us see the ways of engendering such monsters, which the Ancients have set down, that the ingenious reader may learn by the consideration of these ways, to invent of himself other ways how to generate wonderful monsters. Democritus, as Aristotle says, held that the mixture of many seeds, when one is received into the womb before, and another not long after, so that they are meddled and confounded together. It is the cause of the generation of many monsters, that sometimes they have two heads, and more parts then the nature of their kind require. Hence it is in those Birds which use often coition's, do oftentimes bring forth such births. But Empedocles, having forecast all scruples and doubts within himself, seems to have attained the truth in this case. For he says, that the causes of the generation of monstrous creatures, are these, either if the seed be too much, or if it be too little, or if it light not in the right place, or if it be scattered into many parts, or if the congrements be not rightly affected to procreate according to the ordinary course of nature. And Straton assigns many reasons, why such monsters are generated, as, because some new seed is cast upon the former, or some of the former seed is diminished, or some parts transposed, or the womb puffed up with wind. And some physicians say it principally to the place of conception, which is often misplaced, by reason of inflation's. Aristotle says, that such creatures are wont to bring forth many young ones at one birthing, especially such as have many cells or receipts for seed in their womb, do most commonly produce monsters. And in his Book of Problems, he says, that large four-footed beasts, as Horses and Asses, do not produce them so often. His reason is, because the smaller kinds, as Bitches, Sows, Goats, and Ewes, are far more fruitful then the greater kinds are. Nature is earnest in fashioning of a living creature, and first shapes out the principal parts of the body. Afterwards she works sometimes more, sometimes less, as the matter can afford which she works upon, still framing herself thereunto. Whereby it comes to pass, that if the matter be defective, as having but one leg, or but one eye, some exceeding the ordinary course as having four eyes, or four arms, or

four feet, and sometimes having both sexes in them, which are called Hermaphrodites. And so, look how your art disposes and works, and finish your beginnings. But whosoever, would bring forth any monsters by art, thou must learn by examples, and by such principles be directed, as here possible to be brought to pass. For if you attempt likely matters, nature will assist you, and make good your endeavors, and the work will much delight you. For you shall see such things effected, as you would not think of, whereby also you may find the means to procure more admirable effects. There be many reasons and ways whereby may be generated.

"Monsters in Man"

First, this may come by reason of inordinate or unkindly copulation's, when the seed is not conveyed into the due and right places. Again, it may come by the narrowness of the womb, when there are two young ones in it, and for want of room, are pressed and grow together. Again, it may come by the marring of those thin skins of partition, which nature has framed in a woman's womb, to distinguish and keep asunder the young ones. Pliny writes, that in the year of Caius Lalius and Lucius Domitus Consulship, there was born a maid-child that had two heads, four hands, and was of double nature in all respects. And a little before that, a woman servant brought forth a child, that had four feet, and four hands, and four eyes, and as many ears, and double natured in every way. Philostratus in the life Apollonius writes, that there was born in Sicily, a boy having two heads. I myself saw at Naples, a boy alive, out of whose breast came forth another boy, having all his parts, but that his head only stuck behind in the other boy's breast, and thus they had stuck together in their mothers womb, and their hands and four feet, with six fingers on one hand, and six toes upon one foot, and monstrous diverse other ways, which here were too long to discuss. By the like causes may,

"Monsters be generated in Beasts"

We have shown before, that such beasts as bring forth many young ones at one birthing, especially such as have many cells or receipts in their womb for seed, do most often produce monsters. Nicocreon, the Tyrant of Cyprus, had a Hart with four horns. Aelianus saw an Ox that had five feet, one of them in his shoulder, so absolutely made, and so conveniently placed, as it was a great help to him in his going. Livy says, that at Seffa-Arunca, a city of Italy, there was birthed a Lamb that had two heads, and at Apolis, another Lamb having five feet, and there was a Kitling with but three feet. Rhases reports, that he saw a Dog, having three heads. And there be many other like matters which I have no pleasure to speak of. But it may be seen that...

"Monsters in Birds may be more easily produced"

Both in respect that they are more given to lust, and because also they bear in their bodies many Eggs at once, whereby, they may stick together, and easily cleave each to other. And besides this, those Birds that are by nature very fruitful, are wont to lay Eggs that have two yellow yolks. For these causes, Columella and Leontinus the Greek, give counsel to air and purge the houses where the Hens are, and their nests, yes, and the very Hens themselves, with brimstone, and Pitch, and torches, and many do lay a plate of Iron, or some nail heads, and some Bay-tree boughs upon their nests, for all these are supposed to be very good preservatives against monstrous and prodigious births. And Columella reports farther, that many do strew straw Grass, and Bay-tree boughs, and heads of Garlic, and Iron nails in the Hen's nests. All of which are supposed to be good remedies against thunder, that it may not mar their Eggs, and these also do spoil all imperfect Chickens, if there be any, before they grow to any ripeness. Aelianus reports out of Apion, that in the time of Oeneus King of the South, there was seen a crane that had two heads; and in another king's days,

another bird was seen that had four heads. We will show also how to hatch...

"A Chicken with four wings and four feet"

Which we learn out of Aristotle. Among Eggs, there are often some that have two yolks, if the hens are fruitful. For two conceptions cling and grow together, as being very near each to each other, the like where we may see in the fruits of trees, many of them being twins, and growing into each other. Now, if the two yolks be distinguished by a small skin, they yield two perfect Chickens without any blemish. But if the yolks be meddled one with another, without any skin to part them, then that which is produced thereof is a monster. Seek out therefore some fruitful hens, and procure some of the most perfect Eggs that they may lay. You may know them against the Sun, and you shall discern, both whether there be in them two yolks, and also whether they be distinguished or not. And if you find in them such plenty of matter, that you see they are for your turn, let them be sat upon their full time. And the Chickens produced will have four wings and four feet. But you must have special care in bringing them up. And as some Eggs have two yolks, so there are some that have three. But these are not so common, and if they could be gotten, they would yield Chickens with six wings and six legs, which would be more wonderful. There has been seen a small Duck with four feet, having a small thin bill, her foreparts black, her hinder-parts yellow, a black head, whitish eyes, black low feet, and not standing far asunder; and she is at this day kept to be seen at Torga. No question but she was generated after the same manner as we spoke even now of Chickens. So they report of a Pigeon that was seen which had four feet. And many such monsters we have often hatched at home for pleasure sake. So also are serpents generated, having many heads and many tails. Aristotle writes, of certain serpents, that they may be generated after the same manner, to have many heads. The Poets, and the ancient devisors of Fables, do speak much of that, Hydra Lernaean which was one of Hercules labors to overcome. Which fiction was without all question occasioned by these kinds of monsters. And while I was in Naples a Viper was seen alive, which had two heads, and three cloven tongues, and moved every one of them up and down. I myself have seen many lizards that had two or three tails, which the common people most foolishly esteem to be a jest, and it cannot be but these were generated of such Eggs as had two yolks.

Chapter XVIII

"Of certain other ways how to produce monstrous births"

We may also produce monsters by another way then that which we spoke of before, for even after they are brought forth, we may fashion them into a monstrous shape, even as we list. For as we may shape young fruits as they grow, into the fashion of any vessel or case that we make for them to grow into, as we may make a Quince like a mans head, a Cucumber like a Snake, by making a case of that fashion for them to grow in, so also we may do try the births of living creatures. Hippocrates in his book of Air, and Water, And Places, does precisely set down the manner hereof, and shows how they do it, that dwell by the river Phafis, all of them being very long-headed, whereas no other nation is so besides. And surely custom was the first cause that they had such heads, but afterward nature framed herself to that custom, insomuch that they esteemed it an honorable thing to have a very long head. The beginning of that custom was thus. As soon as the child was new born, while his head was still soft and tender, they would presently crush it in their hands, and so cause it to grow

out in length. Yes, they would bind it up with swathing bands, and so cause it to grow out in length, that it might not grow round, but all in length. And by this custom it came to pass, that their heads afterward grew such by nature. And in process of time, they were born with such heads, so that they needed not to be so framed by handling, for whereas the generative seed is derived from all the parts of the body, found bodies yielding good seed, but crazy bodies unsound seed, and often bald fathers beget bald children, and blear-eyed fathers, blear-eyed children, and a deformed father, for the most part a deformed child. And the like also comes to pass concerning other shapes. Why should not longheaded fathers beget longheaded children? But now they are not born with such heads, because that practice is quire out of use, and so nature, which was upheld by that custom, ceases together with the custom.

Chapter XIX

"Of the wonderful force of imagination; and how to produce party-colored births."

Plutark, in his rehearseal of the opinions of philosophers, writes, that Empedocles held that an infant is formed according to that which the mother looks upon at the time of conception. For, says he, women were won to have commonly pictures and images in great request, and to bring forth children resembling the same. Hippocrates, to clear a certain woman's honesty that had brought forth children very unlike their parents, ascribed the cause of it to a certain picture which she had in her chamber. And the same defense Quintilian uses on the behalf of a woman, who being her self fair, had brought forth a Blackmoore, which was supposed by all men to be her slaves son. Damascen reports, that a certain young woman brought forth a child that was all hairy, and searching out the reason thereof, he found the hairy image of John the Baptist in her chamber, which she was wont to look upon. Heliodorus begins that excellent history which he wrote, with the Queen of Ethiopia, who brought forth Chariclea a fair daughter, the cause was determined to be the fable of Andromeda pictured in that chamber, where she lay with the King. We read of some others, that they brought forth horned children, because in the time of their coition they looked upon the fable of Aetaon painted before them. Many children have Hare-lips, and all because their mothers being with child looked upon a Hare. The conceit of the mind, and the force of the imagination is great. But it is then most operative, when it is excessively bent upon any such thing as it cannot attain unto. Women with child, when they long most vehemently, and have their minds earnestly set upon any thing, do thereby alter their inward spirits, the spirits move the blood, and so imprint the likeness of the thing mused upon, in the tender substance of the child. And surely all children would have some such marks or other, by reason of their mothers longing, if this longing were not in some sort satisfied. Wherefore the searchers out of secrets have justly ascribed the marks and signs in the young ones, to the imagination of the mother, especially that imagination which prevails with her in the chiefest actions, as in coition, in letting go her seed, and such like. And as man of all other living creatures, is most swift and fleeting in his thoughts, and fullest of conceits, so the variety of his with affords much variety of such effects, and therefore they are more in mankind then in other living creatures. Jacob was well acquainted with this force of imagination, as the scriptures witness. For endeavoring...

"To bring forth party-colored Sheep,"

he took that course which I would with every man to take, that attempts any such enterprise. He took certain rods and poles of Poplar and Almond-tree, and such as might be easily barked, and cut off half the rind, piling them by white stakes, so that the rods were white and black in several circles, like a Snake's color. Then he put the rods which he had piled, into the gutters and watering troughs, when the sheep came to drink, and were in heat of conception, that they might look upon the rods. And the Sheep conceived before the rods, and brought forth young of party-colors, and with small and great spots. A delightful sight it was. Now afterwards, Jacob parted these Lambs by themselves, and turned the faces of the other Sheep towards these party-colored ones, about the time of their conception. Whereby it came to pass, that the other Sheep in their heat, beholding those that were party colored, brought forth lambs of the like color. And such experiments might be practiced upon all living creatures that bear wool, and would take place in all kinds of beasts.

"Generating party-colored Horses,"

A matter which Horse keepers, and Horse breeders do practice much. For they are often found to hang and adorn with tapestry and painted clothes of sundry colors, the houses and rooms where they put their Mares to take Horse. Whereby, they produce colts of a bright bay color, or of a dapple gray, or of any one color, or of sundry colors together. And Absyrtus teaches the same in effect. Counseling us to cover the Mare's body with some stuff of that color, which we would have the Colt to be of. For look what color she is set forth in, the same will be derived into the Colt. For the Horse that covers her, will be much affected with the sight of such colors, as in the heat of his lust he looks on. And will beget a Colt of the same hue as the example then before his eyes does present unto him. Oppianus in his first book of hunting, writes the same argument. Such is, says he, the industry and practice of man's wit, that they can alter the color of the young ones from the mother, and even in the womb of their Dam, procure them to be of divers colors. For the Horse breeder does paint the Mare's back with sundry colors, (even such as they would procure to be in the Colt,) against the time that both she desires Horse, and the Stallion is admitted to cover her. So the Stallion, when he comes and sees such goodly preparation as it were for his wedding, presently begins to foam at the mouth, and to neigh after her, and is possessed with the fire of raging lust throughout his whole body, raving and taking on, that he cannot forthwith satisfy himself upon his bride. At length the Horse breeder takes off their fetters, and lets them loose together. And the Mare admits him, and afterward brings forth a Colt of as many colors as she beheld in the time of her copulation. For as she conceives the Colt, so withal she conceives those colors which he then looks upon.

"How to procure white Peacocks "

In former times, white Peacocks were such a rare sight in Colen, that every one admired them as a most strange thing. But afterward they became more common, by reason that merchants brought many of them out of Norway. For whereas black or else party-colored Peacocks were carried into that country to be seen, they turned white, for there the old ones sit upon their Eggs in the air, upon the tops of very high mountains, full of snow, and by continual sitting there, it causes some alteration in their own color, but the young ones which they hatch, are white all over. And so no doubt but some such courses will take good effect in all kinds of Birds, for if we take their cages or coops wherein they are kept, and their nests wherein they sit, and white them on the inside with some plaster, or else cover them all over with white colored curtains and so keep them in with grates, that they may not get out, but there couple and sit, and hatch their Eggs, they will yield unto us white broods. So if you would,

"Procure Pigeons of party colors,"

You must take that course which Oppianus has set down. At such time, as they fall to kissing their mate, and are desirous of copulation, let him that keeps them lay before their eyes sundry cloths of the bravest colors they can get, but especially purple. For the Pigeons will in their heat of lust be much affected and delighted with the sight thereof, and the young ones which they bring forth, shall resemble the same colors. The subtle Fowler, says he, that gives himself to take and to bring up Birds, is well acquainted with, and is often found to practice such experiments, and very artificially procures fine colors in young Pigeons. He casts before their sparkling eyes fine wrought tapestry, and red coverlets, and purple garments. And so while he feeds their eyes with pleasing sights, he steals away their imagination to the colors which they look upon, and thereby derives the very same colors into the young ones.

"How to procure a shag-haired Dog."

In breeding time you must strew their kennels, and the places where they lie and couple, and usually haunt, with the fleeces and hides of beasts. And so, while they continually look upon those sights, they will beget shag Whelps like Lions. This we heard came to pass by chance, and without any such intended purpose, that a little Bitch lying continually in a Ram fleece, when she came to be with Whelp, she brought forth puppies of the like hair as the fleece was.

"How to procure Swine, and other beasts to be white."

Swineherds and keepers of beasts, when they would have white litters, are found often to beautify, and to build the stables and places where the beasts resort to lie, with white roofs and white eaves. And the Swine which were brought forth in such white sties, and the other beasts likewise that were brought forth in such whitened places, became thereby white all over.

Chapter XX

"How it may be wrought, that Women should bring forth fair and beautiful children."

By this, which has been spoken, it is easy for any man to work the like effects in mankind, and to know how to procure fair and beautiful children. Writers make mention, that these things which we speak of, have often fallen out by chance. Wherefore it was not here to be omitted. The best means to produce this effect, is to place in the bed-chambers of great men, the images of Cupid, Adonis, and Ganymedes, or else to set them there in carved and graven works, in some solid matter, that they may always have them in their eyes. Whereby it may to pass, that whenever their wives lie with them, still they may think upon those pictures, and have their imagination strongly and earnestly bent thereupon. And not only while they are in the act, but after they have conceived and quickened also. So that when the child is born, imitate and express the same form which his mother conceived in her mind, when she conceived him, and bare in her mind, while she bare him in her womb. And I know by experience that this course will take good effect, for after I had counseled many to use it, there was a woman who had the great desire to be the mother of a fair son, that heard of it, and put it

in practice. For she procured a white boy carved of Marble, well proportioned in every way, and him she had always before her eyes. For such a son, it was that she much desired. And when she lay with her husband, and likewise afterwards, when she was with child, still she would look upon that image, and her eyes and heart were continually fixed upon it. Whereby it came to pass, that when her breeding time was expired, she brought forth a son very like in all points, to that Marble image, but especially in color, being as pale and as white, as if he had been very marble indeed. And thus the truth of this experiment was manifestly proved. Many other women have put the like course in practice, that it is usual among the Lacedaemonians. For they, says he, when they perceive that their wives are breeding young bones, hang up fine pictures, and place goodly images in their sight. Some of the most beautiful and handsome young men that ever mankind afforded, as of Nireus, Narcissus, and valiant Hyacinths, and of other young lusty gallants that were mostly comely and beautiful in face, and very sightly for all the parts of their body; and some, of such excellent gods as was Apollo crowned with a garland of fresh colored bay, and Evan that had a diadem of vine-leaves about his head, and goodly hair hanging down under it. And this they did, that while their wives stood gazing continually upon such brave pictures, and comely portraitures, they might breed and bring forth children of the same comeliness and beauty.

Chapter XXI

"How we may procure either males or females to be generated."

Empedocles was of opinion, that males or females were generated according to the heat or cold that was in them. And thence it is, says he, that the first males are reported to have been generated in the eastern and southern parts of the earth. But the first females in the northern parts. But Parmenides quite contrary affirmed, that males were especially generated towards the North, as having in them more solidity and thickness, and females especially towards the South, as being more loose and open, according to the disposition of the place. Hipponax held, that males and females were generated, according as the seed is either strong and sold, or fluid, weak and feeble. Anaxagoras, writes, that the seed which issues out of the right parts of the body, is derived into the right parts of the womb. And likewise that which issues out of the left parts of the body, fall into the left parts of the womb. But if they change courses, and the right seed falls into the left cell or receipt in the womb, or the left seed into the right cell, then it generates a female. Leucippus held, that there was no cause either in the seed or heat, or solidity, or place, that they should be different sexes. But only as it pleases nature to mark the young ones with different genitories, that the male has a Yard, and the female a womb. Democritus affirms, that either sex in every part proceeds indifferently from either parent. But the young one takes in sex after that parent which was most prevalent in that generation. Hipponax says, if the seed whereof the young is begotten, prevail most, then it is a male. But if the nourishment which it receives in the breeding, prevail more then the seed, then it is a female. But all physicians with one consent affirm, that the right side has most heat in it. Wherefore if the woman receive and retain the generative seed in the right side of her womb, then that which she conceives, is a male. But if in the left side, it is a female. The experience whereof may be evidently seen in such living creatures as bring forth many at one birthing. For if you cut open a Sow, that is great with Pig, you shall find the Boar-pigs lying in the right side, and the Sow-pigs in the left side of her womb. And hence it is, that physicians counsel women, as soon as they have taken in mans seed, to turn them presently on their right side. And hence it is, that if you knit up a Ram's

right stone, he begets Ewe lambs only, as Pliny writes. A Bull, as soon as he has rid a cow, gives evident signs to any man to conjecture whether he has begotten a Cow-calf or a Bulchin. For if he leapt off by the right side, it is certain that he has begotten a Bulchin.. If by the left side, then a Cow-calf. Wherefore the Egyptians in their Hieroglyphics, when they would signify a woman that has brought forth a daughter, they make the character and likeness of a Bull looking toward the left side. But to signify the birth of a son, they make his character as looking toward the right side. But if you desire to have a male generated, Africanus, Columella, and Didymus counsel you to knit up the left stone of the sire. If a female, then to knit up his right stone, at such times as he is to be coupled for generation. But because this would be too much to do, where there is great store of cattle, we may cause it by another means. Northern blasts help much to the conception of a male, and Southern blasts to the conception of a female, as Pliny reports. The force of the Northern air is such, that those beasts which are wont to procreate females only, this will cause to bring forth males also. The Dams at the time of their copulation, must be set with their noses into the North. And if they have been used to coition still in the morning, you must not put them to it in the afternoon, for then they will not stand to their mate. Aristotle, a man most subtle, and exquisitely keen in the works of nature, wills us, that about the time of gendering, we should wait for some Northern blasts in a dry day, and then let the stock feed against the wind, and so let them fall to copulation. If we would procure females to be gendered, then we must so wait for Southern blasts, and let them stand with their heads towards the South as they are in copulation. For not only Aristotle counsels, but Columella and Aelianus also. For it is a rule that Aelianus, Pliny, Africanus and Didymus do all give, that if the cattle, as soon as they have been covered, do turn themselves toward the Southern wind, then certainly they have conceived females. There is also some cause of the procreation of a male, or of a female, in the begetters themselves. Nay further, some cause thereof may be the force and operation of some waters. For sometimes the waters cause that a male or female be generated. There is, not far from the city Pana, a certain river called Milichus. And not far from that, another river called Charadius. Whereof if the beasts drink in the springtime, they commonly bring forth all males. For which cause the shepherds there drive away their flocks at that time, and feed them in that part of the country which lies farthest off from that river, as Pausanias writes in his Achaica.

Chapter XXII

"Of diverse experiments that may be, and have been, practiced upon diverse living creatures."

There remain now certain experiments of living creatures, both pleasant, and of some use, which we have thought good here to set down, to save a labor of seeking them any further. And first,

"How to make Horses have white spots on them."

It is a thing required in the art of trimming of Horses , to be able to cause white spots to grow in some parts of them. For crafty Horse coursers are wont to counterfeit white spots in the forehead, or left thigh, or right shoulder of an Horse. Thereby to deceive such men, as are wont to guess at the goodness and qualities of a Horse, by the conjecture of such marks. And this their counterfeit practice has been detected by this chance, that the hair of a Horses skin being galled off in any place, after a while hoary hairs have grown up there of themselves. And it is not unlikely but that this chance taught them that practice. The manner of the doing it, is, first to shave off the hair in that place where you would have a white patch. But Oppianus speaking of the same experiment, shows

that it is to be done by fire. There are some Horses, says he, that are full of white round spots intermingled with their black color. It comes by the industry of the Horse breeder, who when they are yet tender and young, cunningly burns off their hair with a hot iron. But on the contrary, if you would have,

"The hairs of a wounded or galled place, to grow up of the same color, as the other hair is of,"

Tiberius has taught the way how do it. You must knead three pints of bruised or ground Barley, and put to it the froth of Nitre and a little Salt, and make it into loaves. Then you must put them into an oven till they are burned to coals. Afterwards, crush them and beat them to powder, and then mix them with oil, and anoint the fore or the scar therewith. And this you must do for twenty days. But what should be reason that this Barley ashes should cause, not white hairs, but the like in color to the rest, to grow upon the scars or sores of Horses whereupon it is cast, that, Alexander Aphrodisous ascribes to this, because Barley has in it a purgative and cleaning force, and so washes and expels the humors, and all the naughty stuff, that was gathered by the fore into that part, because it was maimed, and consequently not so well able to revive itself. neither yet will I here omit that boyish experiment whereby we may,

"Procure in Oxen a counterfeit show of fatness."

If you take an Ox well grown in years, and make a hole into hid thigh, and blow wind thereby into him, and afterward give him meat, he will show fat, though indeed he be very lean. We may also, by giving them some kind of water to drink,

"Cause the Fleeces and hides of cattle to be of diverse colors."

as Aelianus show. the river Crathis affords one channel that makes beasts white. For Oxen and Sheep, and all four footed beasts, as Theophrastus, says, as soon as they drink of it, become white, though before they were red or black. In Euboea, all for the most part, are white Oxen by nature. Sheep, by reason of the diversity of water which they drink, do diversely change their color. The force and nature of the rivers working this change in them, especially at every ramming time. Some are turned from black to white, and contrariwise, some are turned from white to black. These alterations are commonly seen near to the river Antandrus, and near also to a certain river Thracia. The river Scamander, which is near unto Troy, makes as many Sheep as drink of the water thereof, to become yellow. We may also conjecture and foresee by certain outward bodily signs in the Dam or sire,

"What color their young ones will be of."

To foreknow the color of young Mules, we must take special example of the hairs of their Dam's ears and eyelids. For however the rest of their body is of one and the same color, yet in those two parts we may discern so many and such colors as the foal shall have, as Columella writes. So if you look under the Ram's tongue, you shall there find certain veins. Which if they be black, then will the Lamb's be black also. But if they be white, then he has begotten white Lambs. For look what color these veins are of, with the same color will the fleece of the Lamb be overspread. Insomuch that if there be sundry colors in them, there will be also sundry like colors upon the Lambs, as Aristotle, Democritus and Didymus do witness. Now, how we may,

"Know by the Egg, whether the chick when it is hatched, will be a Cock or hen."

Aristotle teaches us, for, says he, if the Egg be exactly round, then it will yield a Cock Chicken. But if it be somewhat long, then it yields a Hen. The reason is, because in things that are round, the natural heat is more kindly and strongly compacted together.

"How to make a bird sociable and familiar with thee."

Now we will speak of the sociable ness and familiarity which a certain Pie had with a friend of mine. Who by this pretty device did make the Pie so well acquainted with him, and so serviceable to him, that she would fly to him, not only for the supplying of her daily wants, but as it were for love, never forsaking him night or day. The device was this. while she was yet unfeathered in the nest, he broke off her lower beak, even to her very jaws, that the poor wretch could not eat any meat but that which put into her mouth with hands. And he himself gave her with his own hands all the meat she did eat. After that, she would fly to his trencher at dinner and supper, and would prate and chat unto him very flippant. Insomuch that nothing could be spoken in the house, but she would imitate it, and speak it again. And not only frame her tongue to their words, but her body also to the imitating and resembling of their actions. And he often left her loose at home, and she would fly everywhere. But still at dinner and supper times she would return home. It fell out that the man had occasion to go from home fifteen or sixteen days journey. She would always bear him company, now and then flying a great way before him, and would sit still upon a bough till he came at her. And then she would leap upon his cap and his shoulders, frisking about him for very joy. And sometimes staying behind him, and then when he was gone a great way before, she would in all haste fly away after to overtake him. And she was also his continual bedfellow. And yet to his day he has her, and enjoys her familiar company. But, concerning the general transmutation and change of living creatures, let these things be sufficient which we have already spoken.